



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|---------------------------|---------------------|------------------|
| 10/817,582 | 04/02/2004 | Thomas Jefferson Runaldue | 148-1 | 2595 |
| 7590 | 06/14/2005 | | EXAMINER | |
| Truong Dinh Dinh & Associates 2506 Ash Street Palo Alto, CA 94306 | | | COX, CASSANDRA F | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2816 | |

DATE MAILED: 06/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H/F

| | | | |
|------------------------------|------------------------|-------------------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/817,582 | RUNALDUE, THOMAS JEFFERSON | |
| | Examiner | Art Unit | |
| | Cassandra Cox | 2816 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 02 April 2004.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-21 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) 18 is/are allowed.
- 6) Claim(s) 1,8-10,13,15,16 and 19 is/are rejected.
- 7) Claim(s) 2-7, 11-12, 14, 17-18, 20-21 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 02 April 2004 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 8-10, 13, 15-16, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Agee (U.S. Patent No. 6,128,276).

In reference to claim 1, Agee discloses in Figure 7B an integrated circuit comprising: a first weight generator (191, 183, 184, 185) operative to receive a first sequence of phase values (the output of BPF₁) for a first analog signal and provide a first inphase weight (which is seen as the output of 184) and a first quadrature weight (which is seen as the output of 185) for each phase value in the first sequence; a first

signal generator (186, 187) operative to receive and multiply inphase and quadrature oscillator signals (from oscillator 189 and phase shifter 188) with first inphase and quadrature weights, respectively, and provide the first analog signal having a frequency and leading edges determined by the phase values in the first sequence; and a digital clock generator (190) operative to receive the first analog signal and generate a digital clock signal having a frequency determined by the frequency of the first analog signal. The same applies to claim 16 and claim 19 wherein the oscillator for providing inphase and quadrature oscillator signals is seen to be blocks 189 and 188.

In reference to claim 8, Agee discloses in Figure 7B wherein the first signal generator includes a first multiplier (186) operative to multiply the inphase oscillator signal (output of 189) with the first inphase weights (output of 184) and provide a first intermediate signal (output of 186), a second multiplier (187) operative to multiply the quadrature oscillator signal (output of 188) with the first quadrature weights (output of 185) and provide a second intermediate signal (output of 187), and a summer (which is seen as the node combining the output of multipliers 186 and 187) operative to sum the first and second intermediate signals and provide the first analog signal.

In reference to claim 9, Agee discloses in Figure 7B wherein the first and second multipliers are implemented with four quadrant multipliers (186, 187). The same applies to claim wherein the multipliers are considered to be equivalent to two quadrant multipliers since only two of the quadrants are actually used.

In reference to claim 13, Agee discloses in Figure 7B an oscillator (188, 189) operative to provide the inphase and quadrature oscillator signals.

In reference to claim 15, the oscillator (188, 189) shown by Agee in Figure 7B is seen to be operative to provide the inphase and quadrature oscillator signals at a fixed frequency.

Allowable Subject Matter

4. Claim 18 is allowed.
5. Claims 2-7, 11-12, 14, 17, and 20-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
6. The following is a statement of reasons for the indication of allowable subject matter: Claims 2, 17, and 20 would be allowable because the closest prior art of record fails to disclose a circuit as shown in Figure 6 wherein the digital clock generator (250) is operative to generate a third analog signal (ACLK) in combination with the rest of the limitations of the base claims and any intervening claims. Claim 3 would be allowable because the closest prior art of record fails to disclose a circuit as shown in Figure 2 wherein the circuit further comprises a divider (260) in combination with the rest of the limitations of the base claims and any intervening claims. Claims 4-7 would be allowable because the closest prior art of record fails to disclose a circuit as shown in Figure 2 wherein the circuit further comprises a phase generator (270) providing the first sequence of phase values based on a frequency control value (FreqCtrl_1) in combination with the rest of the limitations of the base claims and any intervening claims. Claims 11-12 would be allowable because the closest prior art of record fails to

disclose a circuit as shown in Figure 9 wherein the first weight generator (240a) includes a look-up table (914a), a first (918a) and second (920a) digital-to-analog converter in combination with the rest of the limitations of the base claims and any intervening claims. Claim 14 would be allowable because the closest prior art of record fails to disclose a circuit as shown in Figure 3 wherein the oscillator (316) is part of a phase locked loop (210) in combination with the rest of the limitations of the base claims and any intervening claims. Claim 21 would be allowable because the closest prior art of record fails to disclose a circuit as shown in Figure 2 wherein the clock generation system comprises a plurality of clock generators (Clock Generator K), each clock generator including a digital clock generator (250) as called for in the base claim in combination with the rest of the limitations of the base claims and any intervening claims. The closest prior art of record discloses a plurality of clock generators that share a single digital clock generator.

7. The following is an examiner's statement of reasons for allowance: Claim 18 is allowed because the closest prior art of record fails to disclose a circuit as shown in Figure 6 wherein the digital clock generator (250) is operative to generate a third analog signal (ACLK) in combination with the rest of the limitations of the base claims and any intervening claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

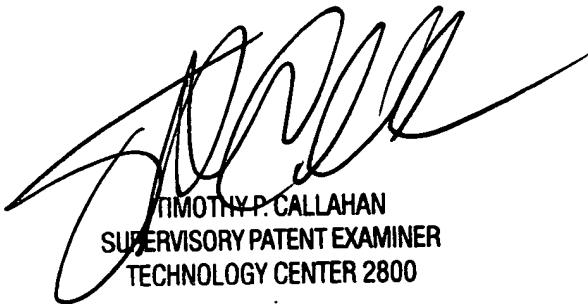
8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cassandra Cox whose telephone number is 571-272-1741. The examiner can normally be reached on Monday-Thursday from 7:00 AM to 4:30 PM and on alternate Fridays from 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CC
June 9, 2005



TIMOTHY P. CALLAHAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800